AMENDMENTS TO THE CLAIMS

Below is the entire set of pending claims pursuant to 37 C.F.R §1.121(c)(3)(i), with mark-ups showing the changes made in the present Amendment.

1. (Currently amended) A diode-pumped solid state laser amplifier, comprising:

a laser rod; and

at least one diode array located proximate to the laser rod, each diode array having a plurality of high-power diode bars spaced thereon wherein the spacing ~~of~~between the high-power diode bars and the location of the diode array from the laser rod are selected such that the full-width, half max (FWHM) point of the radiation from one diode bar overlaps the FWHM point of the radiation of an adjacent diode bar so as to allow the laser rod to receive the radiation emitted by the diode bars in a substantially uniform distribution along the length of the laser rod.

2. (Original) A laser amplifier as recited in Claim 1, wherein each of the high-power diode bars produces at least about 50W.

3. (Original) A laser amplifier as recited in Claim 1, wherein each diode array includes five high-power diode bars.

4. (Currently amended) A laser amplifier as recited in Claim 3, wherein the plurality of high-power diode bars have a spacing of about 12.5 mm between each other in the diode array.

5. (Currently amended) A laser amplifier as recited in Claim 4, wherein the distance from the at least one each diode array to the center of the laser rod is about 25 mm.

6. (Original) A laser amplifier as recited in claim 1, wherein five diode arrays are placed around the circumference of the laser rod with an angular separation of about 72 degrees.

7. (Original) A laser amplifier as recited in claim 1, further comprising a transparent coolant barrier surrounding the laser rod, wherein the coolant barrier is operable to pass a coolant over the surface of the laser rod.

8. (Original) A laser amplifier as recited in claim 7, wherein the coolant comprises water.

9. (Currently amended) A diode-pumped solid state laser amplifier comprising:

a first laser rod having a longitudinal axis;

an odd number of first diode arrays located proximate to the first laser rod, each first diode array having a plurality of high-power diode bars spaced thereon wherein the spacing ~~of~~between the high-power diode bars and the location of the first diode ~~array~~arrays from the first laser rod are selected such that the full-width, half max (FWHM) point of the radiation from one diode bar overlaps the FWHM point of the radiation of an adjacent diode bar on the same first diode array so as to allow the first laser rod to receive radiation emitted by the diode bars in a substantially uniform distribution along the length of the first laser rod, wherein the first diode arrays are positioned around the circumference of the laser rod with an even angular separation;

a second laser rod having a longitudinal axis that is aligned with the longitudinal of the first laser rod;

an odd number of second diode arrays located proximate to the second laser rod, each second diode array having a plurality of high-power diode bars spaced thereon wherein the spacing ~~of~~between the high-power diode bars and the location of the second diode ~~array~~arrays from the second laser rod are selected such that the full-width, half max (FWHM) point of the radiation from one diode bar overlaps the FWHM point of the radiation of an adjacent diode bar on the same second diode array so as to allow the second laser rod to receive radiation emitted by the diode bars in a substantially uniform distribution along the length of the second laser rod, wherein the second diode arrays are positioned around the circumference of the laser rod with an even angular separation that is inversely proportional to the angular separation of the first diode arrays;

a 90 degree rotator disposed between the first and second laser rods along the longitudinal axes of the laser rods; and

a compensating lens disposed between the first and second laser rods along the longitudinal axes of the laser rods, wherein the compensating lens imparts a negative spherical lensing effect.

10. (Original) A laser amplifier as recited in Claim 9, wherein each of the high-power diode bars produces at least about 50W.

11. (Original) A laser amplifier as recited in Claim 9, wherein each of the first and second diode arrays includes five high-power diode bars.

12. (Currently amended) A laser amplifier as recited in Claim 11, wherein the plurality of high-power diode bars have a spacing of about 12.5 mm between each other in the respective diode array.

13. (Currently amended) A laser amplifier as recited in Claim 12, wherein the distance from each of the first and second diode ~~array~~arrays to the center of the respective laser rod is about 25 mm.

14. (Original) A laser amplifier as recited in claim 9, wherein five diode arrays are placed around the circumference of the first laser rod with an angular separation of about 72 degrees and five diode arrays are placed around the circumference of the second laser rod with an angular separation of about 72 degrees.

15. (Original) A laser amplifier as recited in claim 9, further comprising a transparent coolant barrier surrounding the laser rod, wherein the coolant barrier is operable to pass a coolant over the surface of the laser rod.

16. (Original) A laser amplifier as recited in claim 9, wherein the coolant comprises water.

17. (Currently amended) A method of manufacturing a diode-pumped solid state laser amplifier, the method comprising:

providing a laser rod; and

locating at least one diode array proximate to the laser rod, each diode array including a plurality of high-power diode bars, wherein spacing ~~of~~between the high-power diode bars and the location of the diode array from the laser rod ~~allows~~are selected such that the full-width, half max (FWHM) point of the radiation from one diode bar overlaps the FWHM point of the radiation of an adjacent diode bar so as to allow the laser rod to receive radiation from the diode arrays in a substantially uniform distribution along the length of the laser rod.